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July 6, 2004

Receiver: Examiner Diep (USPTO Central Fax)

FAX #: 703-872-9306

Sender: Godfrey K. Kwan
Our Ref. No.: CISC217

Application No: 09/867,967

Re: Response to Restriction Req'mt

Pages Including Cover Sheet(s): 05

MESSAGE:

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Shen and Tse

Attorney Docket No.: CISCP217/4073

Application No.: 09/867,967

Examiner: Diep, N.

Filed: May 29, 2001

Group: 2613

Title: METHODS AND APPARATUS FOR
UPDATING A REDUCTION RATIO

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2004.

Signed: _____

Joyce L. Ferreira

RESPONSE TO RESTRICTION REQUIREMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Restriction Requirement dated June 17, 2004, Applicants provisionally elect, with traverse, Group II claims 20-64 to prosecute in the above-identified patent application. Group II includes independent claims 20, 39, and 58. Applicants reserve the right to prosecute Group I, claims 1-19 and 65-74 at a later time. Group I includes independent claims 1 and 65.

Atty Dkt: CISC217/4073

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The independent claims in Groups I and II are included below for the Examiner's convenience.

1. A method of altering blocks of transform coefficients associated with input bits to provide modified blocks of transform coefficients associated with output bits, the method comprising:

- identifying a first block of transform coefficients associated with the input bits;
- altering the first block of transform coefficients by using a reduction ratio to generate a first block of modified transform coefficients;
- generating an first updated reduction ratio;
- identifying a second block of transform coefficients associated with the input bits;
- and
- altering the second block of transform coefficients to generate a second block of modified transform coefficients using the first updated reduction ratio.

20. A method for altering transform coefficients associated with macroblocks in a frame having a frame size and a target reduction ratio, the method comprising:

- identifying a number of input bits and a number of output bits associated with a set of processed macroblocks, the processed macroblocks having altered transform coefficients;
- generating an updated reduction ratio using the number of input bits and the number of output bits associated with the set of processed macroblocks; and
- altering transform coefficients of a next macroblock using the updated reduction ratio to allow attainment of a target reduction ratio.

39. An apparatus for altering transform coefficients associated with macroblocks in a frame having a frame size and a target reduction ratio, the apparatus comprising:

- a feedback stage configured to identify a number of input bits and a number of output bits associated with a set of processed macroblocks, the processed macroblocks having altered transform coefficients, wherein the feedback stage is further configured to generate an updated reduction ratio using rate control information; and
- a filtering stage coupled to the feedback stage configured to alter transform coefficients of a next macroblock using the updated reduction ratio.

58. A computer readable medium comprising computer code for altering blocks of transform coefficients associated with input bits to provide modified blocks of transform coefficients associated with output bits, the computer readable medium comprising:

computer code for identifying a first block of transform coefficients associated with the input bits;

computer code for altering the first block of transform coefficients by using a reduction ratio to generate a first block of modified transform coefficients;

computer code for generating an updated reduction ratio;

computer code for identifying a second block of transform coefficients associated with the input bits; and

computer code for altering the second block of transform coefficients to generate a second block of modified transform coefficients using the updated reduction ratio.

65. An apparatus for altering blocks of transform coefficients associated with input bits to provide modified blocks of transform coefficients associated with output bits, the computer readable medium comprising:

means for identifying a first block of transform coefficients associated with the input bits;

means for altering the first block of transform coefficients by using a reduction ratio to generate a first block of modified transform coefficients;

means for generating an updated reduction ratio;

means for identifying a second block of transform coefficients associated with the input bits; and


means for altering the second block of transform coefficients to generate a second block of modified transform coefficients using the updated reduction ratio.

The independent claims 1, 20, 39, 58, and 65 relate to altering blocks of transform coefficients using an updated reduction ratio. The independent claims all recite "altering" ... "transform coefficients", "generating" ... "an updated reduction ratio", "using" ... "the updated reduction ratio". It should not, therefore, present an undue burden to search all five independent claims in Group I and Group II together.

Applicants respectfully submit that all claims in Groups I and II relate to altering transform coefficients using an updated reduction ratio and that the restriction requirement should be withdrawn.

If any fees are due in connection with the filing this Response to Restriction Requirement, the Commissioner is hereby authorized to charge such fees to Deposit Account 500388 (Order No. CISCP217).

Respectfully submitted,
BEYER WEAVER & THOMAS, LLP


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